



PATENT  
Customer No. 22,852  
Attorney Docket No. 05725.0866

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: )  
Grégory PLOS ) Group Art Unit: 1751  
Application No.: 09/820,016 ) Examiner: E. Elhilo  
Filed: March 29, 2001 )  
For: COMPOSITIONS FOR THE )  
OXIDATION DYEING OF )  
KERATINOUS FIBERS )  
COMPRISING AT LEAST ONE )  
OXIDATION DYE AND AT LEAST )  
ONE ENZYMATIC OXIDIZING )  
AGENT, AND DYEING METHODS )

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**DECLARATION UNDER 37 C.F.R. § 1.132**

I, Grégory PLOS, do hereby make the following declaration:

1. I am a French citizen, residing at 5 passage du chemin vert 75011, Paris, France.
2. I have been awarded a degree in Chemical Engineering from the Institut National Agronomique de Paris-Grignon.
3. I have been employed by L'ORÉAL since 1997 and I am presently a Research Engineer in the Hair Dyeing Applied Research Department at L'ORÉAL. During my employment at L'ORÉAL, I have been engaged in applied research and development regarding hair dyeing and compositions for the treatment of hair.

Application No. 09/820,016  
Attorney Docket No. 05725.0866

4. Given my education and experience, particularly in the area of hair dyeing and compositions for the treatment of hair, I consider myself able to provide the following testimony based on the following additional experiments for the U.S. Application No. 09/820,016 conducted by me or under my direct supervision.

#### COMPARATIVE TESTING

5. Comparative testing was performed with comparative composition 1 and inventive composition 2. Each composition contained the following ingredients as described in Table I below:

Table I		
	Composition 1 (Comparative Example)	Composition 2 (Inventive Example)
Para-phenylenediamine	$3 \times 10^{-3}$ mole	$3 \times 10^{-3}$ mole
3,4-diaminopyridine	$3 \times 10^{-3}$ mole	—
2,3-diamino-6-methoxypyridine	—	$3 \times 10^{-3}$ mole
Uric acid	1 gram	1 gram
Uricase	20,000 units	20,000 units
2-amino-2-methyl-1-propanol	qs pH 9.5	qs pH 9.5
Demineralized water	qsp 100 grams	qsp 100 grams

6. Each composition was applied to locks of natural, permed, or bleached hair containing 90% white hair. 5 grams of the composition were applied for each 1 gram of hair. After 30 minutes at room temperature, the hair was rinsed with water and dried.

7. The color of the hair was determined with the  $L^*a^*b^*$  system, using a MINOLTA CM3600d<sup>®</sup> spectrophotometer (light D65, angle 10 degrees). According to this system,  $L^*$  indicates the lightness or the intensity of the color of the hair. The chromaticity is expressed by the parameters  $a^*$  and  $b^*$ ,  $a^*$  indicating the axis of

Application No. 09/820,016  
Attorney Docket No. 05725.0866

green/red shades and  $b^*$  the axis of yellow/blue shades. The lower the value of  $L^*$ , the more intense the color of the hair.  $\Delta E$ , which is the color variation between a colored lock of bleached hair containing 90% white hair and a colored lock of natural hair containing 90% white hair, or between a colored lock of permed hair containing 90% white hair and a colored lock of natural hair containing 90% white hair, is obtained from the following formula:

$$\Delta E = \sqrt{(L^* - L_o^*)^2 + (a^* - a_o^*)^2 + (b^* - b_o^*)^2}$$

wherein  $L^*$  is lightness and  $a^*$  and  $b^*$  are the chromacity coordinates for the colored lock of bleached or permed hair containing 90% white hair.  $L_o^*$  is the lightness and  $a_o^*$  and  $b_o^*$  are the chromacity coordinates of the colored lock of natural hair containing 90% white hair. The lower the value of  $\Delta E$ , the less selective the resulting color of the hair.

8. The results of these comparative tests are shown in Tables II and III below:

Table II

	$L^*$ (Natural hair)	$L^*$ (Permed hair)	$L^*$ (Bleached hair)
Composition 1	45.0	44.9	43.1
Composition 2	30.9	39.7	30.7

Table III

	Natural hair			Bleached hair			
	$L^*$	$a^*$	$b^*$	$L^*$	$a^*$	$b^*$	$\Delta E$
Composition 1	45.0	2.0	11.2	43.1	8.7	23.8	14.4
Composition 2	30.9	0.2	0.6	30.7	5.7	10.3	11.1

9. The results in Table II show that that the color obtained from the composition according to the inventive example, composition 2 (comprising the pyridine derivative 2,3-diamino-6-methoxypyridine), is more intense than the color obtained from

Application No. 09/820,016  
Attorney Docket No. 05725.0866

3,4-diaminopyridine, a pyridine derivative listed in U.S. Patent No. 6,312,477 to de la Mettrie et al. ("de la Mettrie '477"), in column 8, lines 3-9, and used in the comparative example herein.

10. The results of Table III show that composition 2, within the scope of the presently claimed invention, provides a less selective coloration than the coloration obtained with a composition listed in de la Mettrie '477 and used in composition 1.

11. Both of these results were unpredictable.

12. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated: 01.12.2003

By: Gregory PLOS.  
Gregory PLOS